

- 2 -

Docket No. 0756-2306  
Application Serial No. 09/842,315

wherein [said second and third] the second to fourth steps are performed in sequence without being exposed to air.

2. (Amended) A method for manufacturing a semiconductor device comprising:

the first step of forming an amorphous semiconductor film over a substrate;

the second step of forming a crystalline semiconductor film by crystallizing the amorphous semiconductor film;

the third step of forming an island-shaped crystalline semiconductor layer by patterning the crystalline semiconductor film;

the fourth step of forming a thin oxide film on a surface of the island-shaped crystalline semiconductor layer by applying water in which ozone is dissolved;

the fifth step of etching the crystalline semiconductor layer to remove the thin oxide film and contaminant impurities on the surface of the crystalline semiconductor layer by applying an etching solution while spinning the substrate; and

the sixth step of forming a gate insulating film in contact with the crystalline semiconductor layer after the fifth step,

wherein said fourth to sixth steps are performed in sequence without being exposed to air.

3. (Amended) A method for manufacturing a semiconductor device comprising:

the first step of forming a base film over a substrate;

the second step of forming a thin oxide film on a surface of the base film by applying water in which ozone is dissolved;

the third step of etching the base film to remove the thin oxide film and contaminant impurities on the surface of the base film by applying an etching solution while spinning the substrate; and

the fourth step of forming a semiconductor film in contact with the base film after the third step,

DI  
Cont.

- 3 -

Docket No. 0756-2306  
Application Serial No. 09/842,315

wherein the second to fourth steps are performed in sequence without being exposed to air.

4. (Amended) A method for manufacturing a semiconductor device comprising:

a step of forming a gate insulating film over a substrate;

a step of forming a thin oxide film on the surface of the gate insulating film by applying water in which ozone is dissolved;

a step of etching the gate insulating film to remove the thin oxide film and contaminant impurities on the surface of the gate insulating film by applying an etching solution while spinning the substrate; and

a step of forming a gate conductive film in contact with the gate insulating film after the step of etching,

wherein the step of etching the gate insulating film and the step of forming the gate conductive film are performed in sequence without being exposed to air.

5. (Amended) A method for manufacturing a semiconductor device according to claim 1, wherein the etching solution comprises fluorine.

6. (Amended) A method for a semiconductor device according to claim 1, wherein the water comprises ozone at a concentration of 6 mg/L or more.

7. (Amended) A method for manufacturing a semiconductor device according to claim 2, wherein the etching solution comprises fluorine.

8. (Amended) A method for a semiconductor device according to claim 2, wherein the water comprises ozone at a concentration of 6 mg/L or more.

9. (Amended) A method for manufacturing a semiconductor device according to claim 3, wherein the etching solution comprises fluorine.

DI  
Cont.

- 4 -

Docket No. 0756-2306  
Application Serial No. 09/842,315

10. (Amend d) A method for a semiconductor device according to claim 3, wherein the water comprises ozone at a concentration of 6 mg/L or more.

11. (Amended) A method for manufacturing a semiconductor device according to claim 4, wherein the etching solution comprises fluorine.

DI  
Cont.  
SUB  
E  
12. (Amended) A method for a semiconductor device according to claim 4, wherein said surface is etched with an acid solution which includes fluorine after washing with pure water in which ozone is dissolved in said second step] the water comprises ozone at a concentration of 6 mg/L or more.

13. (Amended) A method for manufacturing a semiconductor device comprising:

forming a semiconductor film over a substrate;

forming a thin oxide film on a surface of the semiconductor film by applying pure water in which ozone is dissolved;

etching the surface of the semiconductor film with an acid solution which includes fluorine to remove the thin oxide film and at least one of B, Na, K, Mg, and Ca by applying the acid solution while spinning the substrate; and

forming a gate insulating film in contact with the semiconductor film.

14. (Amended) A method for manufacturing a semiconductor device comprising:

forming a base film over a substrate;

forming a thin oxide film on a surface of the base film by applying pure water in which ozone is dissolved;

etching the surface of the base film with an acid solution which includes fluorine to remove the thin oxide film and at least one of B, Na, K, Mg, and Ca by applying the acid solution while spinning the substrate; and

forming a semiconductor film in contact with the base film.

- 5 -

Docket No. 0756-2306  
Application Serial No. 09/842,315

15. (Amended) A method for manufacturing a semiconductor device comprising:

forming a gate insulating film over a substrate;

forming a thin oxide film on a surface of the gate insulating film [with] by applying pure water in which ozone is dissolved;

etching the surface of the gate insulating film with an acid solution which includes fluorine to remove the thin oxide film and at least one of B, Na, K, Mg, and Ca by applying the acid solution while spinning the substrate; and

forming a gate conductive film in contact with the gate insulating film after the contaminant impurities are removed.

D1  
Cont.